Hydric Soils

Brown County, Minnesota

[This report lists only those map unit components that are rated as hydric. Dashes (---) in any column indicate that the data were not included in the database. Definitions of hydric criteria codes are included at the end of the report]

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
8B:					
Sparta loamy sand, 2 to 6 percent slopes	Sparta	90	Outwash plains	No	---
	Dickman	5	Outwash plains	No	---
	Hanska	5	Depressions	Yes	2B3, 3
8C:					
Sparta loamy sand, 6 to 15 percent slopes	Sparta	90	Outwash plains	No	---
	Terril	10	Moraines	No	---
27A:					
Dickinson sandy loam, 0 to 2 percent slopes	Dickinson	90	Outwash plains	No	---
	Darfur	5	Drainageways	Yes	2B3
	Hoopeston	5	Outwash plains	No	---
27B:					
Dickinson sandy loam, 2 to 6 percent slopes	Dickinson	85	Outwash plains	No	---
	Darfur	10	Drainageways	Yes	2B3
	Hoopeston	5	Outwash plains	No	---
31E:					
Storden loam, 18 to 24 percent slopes	Storden	80	Moraines	No	---
	Clarion	10	Moraines	No	---
	Delft	5	Drainageways	Yes	2B3
	Terril	5	Moraines	No	---
31F:					
Storden loam, 24 to 60 percent slopes	Storden	80	Moraines	No	---
	Clarion	10	Moraines	No	---
	Delft	5	Drainageways	Yes	2B3
	Terril	5	Moraines	No	---

Hydric Soils

Brown County, Minnesota

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
35:					
Blue Earth mucky silt loam	Blue Earth	85	Moraines, Relict lakebeds	Yes	2B3, 3
	Canisteo	10	Rims	Yes	2B3
	Essexville	5	Rims	Yes	2B3
41A:					
Estherville sandy loam, 0 to 2 percent slopes	Estherville	90	Outwash plains	No	---
	Hanska	4	Depressions	Yes	2B3, 3
	Lemond	3	Drainageways	Yes	2B3
	Linder	3	Outwash plains	No	---
41B:					
Estherville sandy loam, 2 to 6 percent slopes	Estherville	90	Outwash plains	No	---
	Hanska	4	Depressions	Yes	2B3, 3
	Lemond	3	Drainageways	Yes	2B3
	Linder	3	Outwash plains	No	---
85:					
Calco silty clay loam	Calco, occasionally flooded	90	Flood plains	Yes	2B3
	Nishna	5	Flood plains	Yes	2B3
	Oshawa	5	Flood plains	Yes	2B3, 3
86:					
Canisteo clay loam	Canisteo	80	Depressions, Flats, Moraines, Rims	Yes	2B3
	Glencoe	5	Depressions	Yes	2B3, 3
	Normania	5	Moraines	No	---
	Okoboji	5	Depressions	Yes	2B3, 3
	Seaforth	5	Moraines	No	---

Hydric Soils

Brown County, Minnesota

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
94B:					
Terril loam, 2 to 6 percent slopes	Terril	90	Hills, Moraines	No	---
	Clarion	4	Moraines	No	---
	Delft	3	Drainageways	Yes	2B3
	Ves	3	Moraines	No	---
94C:					
Terril loam, 6 to 12 percent slopes	Terril	85	Hills, Moraines	No	---
	Clarion	5	Moraines	No	---
	Delft	5	Drainageways	Yes	2B3
	Ves	5	Moraines	No	---
102B:					
Clarion loam, 1 to 4 percent slopes	Clarion	85	Hills, Moraines	No	---
	Storden	10	Moraines	No	---
	Webster	5	Drainageways	Yes	2B3
102B2:					
Clarion loam, 3 to 6 percent slopes, eroded	Clarion, eroded	80	Hills, Moraines	No	---
	Storden	10	Moraines	No	---
	Terril	5	Moraines	No	---
	Webster	5	Drainageways	Yes	2B3
113:					
Webster clay loam	Webster	85	Flats, Moraines	Yes	2B3
	Glencoe	5	Depressions	Yes	2B3, 3
	Nicollet	5	Moraines	No	---
	Seaforth	5	Moraines	No	---

Hydric Soils

Brown County, Minnesota

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
114:					
Glencoe clay loam	Glencoe	85	Depressions, Moraines	Yes	2B3, 3
	Palms	10	Depressions	Yes	1, 3
	Blue Earth	5	Depressions	Yes	1, 3
128B:					
Grogan silt loam, 1 to 6 percent slopes	Grogan	80	Stream terraces	No	---
	Clarion	10	Moraines	No	---
	Darfur	5	Drainageways	Yes	2B3
	Madelia	5	Drainageways	Yes	2B3
130:					
Nicollet clay loam	Nicollet	85	Moraines, Rises	No	---
	Canisteo	5	Flats	Yes	2B3
	Storden	5	Moraines	No	---
	Webster	5	Drainageways	Yes	2B3
136:					
Madelia silty clay loam	Madelia	90	Flats, Lake plains	Yes	2B3
	Lemond	5	Flats	Yes	2B3
	Tilfer	5	Flats	Yes	2B3
140:					
Spicer silty clay loam	Spicer	90	Flats, Lake plains	Yes	2B3
	Lemond	10	Flats	Yes	2B3
227:					
Lemond loam	Lemond	90	Flats, Outwash plains	Yes	2B3
	Dickman	5	Outwash plains	No	---
	Hanska	5	Depressions	Yes	2B3, 3

Hydric Soils

Brown County, Minnesota

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
247:					
Linder sandy loam	Linder	90	Outwash plains	No	---
	Estherville	4	Outwash plains	No	---
	Hanska	3	Depressions	Yes	2B3, 3
	Lemond	3	Flats	Yes	2B3
269:					
Millington clay loam	Millington, occasionally flooded	85	Flood plains	Yes	2B3
	Oshawa	10	Flood plains	Yes	2B3, 3
	Spillville	5	Flood plains	No	---
281:					
Darfur loam	Darfur	90	Flats, Outwash plains	Yes	2B3
	Hoopeston	10	Outwash plains	No	---
282:					
Hanska sandy loam	Hanska	90	Flats, Outwash plains	Yes	2B3
	Dickman	10	Outwash plains	No	---
313:					
Spillville loam	Spillville, occasionally flooded	90	Flood plains	No	---
	Coland	10	Flood plains	Yes	2B3
317:					
Oshawa silty clay loam	Oshawa, frequently flooded	80	Flood plains	Yes	2B3, 3, 4
	Calco	10	Flood plains	Yes	2B3
	Millington	10	Flood plains	Yes	2B3
327A:					
Dickman sandy loam, 0 to 2 percent slopes	Dickman	90	Hills, Outwash plains	No	---
	Hanska	10	Drainageways	Yes	2B3

Hydric Soils

Brown County, Minnesota

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
327B:					
Dickman sandy loam, 2 to 6 percent slopes	Dickman	90	Hills, Outwash plains	No	---
	Hanska	5	Drainageways	Yes	2B3
	Lemond	5	Flats	Yes	2B3
336:					
Delft clay loam	Delft	90	Drainageways, Moraines	Yes	2B3
	Terril	10	Moraines	No	---
386:					
Okoboji muck	Okoboji	85	Depressions, Moraines	Yes	2B3, 3
	Blue Earth	10	Depressions	Yes	1, 3
	Canisteo	5	Rims	Yes	2B3
421B:					
Ves loam, 1 to 4 percent slopes	Ves	85	Hills, Moraines	No	---
	Webster	15	Drainageways	Yes	2B3
421B2:					
Ves loam, 3 to 6 percent slopes, eroded	Ves, eroded	80	Hills, Moraines	No	---
	Terril	10	Moraines	No	---
	Webster	10	Drainageways	Yes	2B3
423:					
Seaforth loam	Seaforth	90	Moraines, Rises	No	---
	Canisteo	5	Rims	Yes	2B3
	Webster	5	Drainageways	Yes	2B3
463:					
Minneiska sandy loam	Minneiska, occasionally flooded	90	Flood plains	No	---
	Oshawa	10	Flood plains	Yes	2B3, 3

Hydric Soils

Brown County, Minnesota

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
487:					
Hoopeston sandy loam	Hoopeston	85	Outwash plains	No	---
	Darfur	10	Drainageways	Yes	2B3
	Dickinson	5	Outwash plains	No	---
495:					
Zumbro loamy sand	Zumbro, rarely flooded	90	Flood plains	No	---
	Minneiska	10	Outwash plains	No	---
499:					
Hanska loam, depressional	Hanska, depressional	90	Depressions, Outwash plains	Yes	2B3, 3
	Blue Earth	10	Depressions	Yes	1, 3
518:					
Kalmarville sandy loam	Kalmarville, frequently flooded	90	Flood plains	Yes	2B3
	Coland	5	Flood plains	Yes	2B3
	Millington	5	Flood plains	Yes	2B3
574:					
Du Page loam	Du Page, occasionally flooded	90	Flood plains	No	---
	Minneiska	5	Outwash plains	No	---
	Nishna	5	Flood plains	Yes	2B3
575:					
Nishna silty clay	Nishna, occasionally flooded	90	Flood plains	Yes	2B3
	Du Page	10	Flood plains	No	---
603:					
Hanlon sandy loam	Hanlon, occasionally flooded	90	Flood plains	No	---
	Coland	10	Flood plains	Yes	2B3

Hydric Soils

Brown County, Minnesota

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
611B:					
Hawick coarse sandy loam, 2 to 6 percent slopes	Hawick	90	Hills, Outwash plains	No	---
	Linder	10	Outwash plains	No	---
611C:					
Hawick coarse sandy loam, 6 to 15 percent slopes	Hawick	90	Hills, Outwash plains	No	---
	Linder	5	Outwash plains	No	---
	Terril	5	Moraines	No	---
639:					
Ridgeport sandy loam	Ridgeport	90	Stream terraces	No	---
	Hanska	5	Flats	Yes	2B3
	Linder	5	Outwash plains	No	---
820B:					
Dickman-Clarion complex, 2 to 6 percent slopes	Dickman	50	Hills, Moraines	No	---
	Clarion	40	Hills, Moraines	No	---
	Nicollet	4	Moraines	No	---
	Terril	3	Moraines	No	---
	Webster	3	Drainageways	Yes	2B3
919:					
Lemond-Canisteo complex	Lemond	60	Flats, Moraines	Yes	2B3
	Canisteo	35	Flats, Moraines	Yes	2B3
	Hanska	3	Depressions	Yes	2B3, 3
	Linder	2	Outwash plains	No	---

Hydric Soils

Brown County, Minnesota

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
920B:					
Clarion-Estherville-Storden complex, 2 to 6 percent slopes	Clarion	50	Hills, Moraines	No	---
	Estherville	25	Hills, Moraines	No	---
	Storden	15	Hills, Moraines	No	---
	Nicollet	5	Moraines	No	---
	Webster	5	Drainageways	Yes	2B3
920C:					
Clarion-Estherville-Storden complex, 6 to 12 percent slopes	Clarion	40	Hills, Moraines	No	---
	Estherville	25	Hills, Moraines	No	---
	Storden	20	Hills, Moraines	No	---
	Delft	5	Drainageways	Yes	2B3
	Nicollet	5	Moraines	No	---
	Terril	5	Moraines	No	---
921B2:					
Clarion-Storden loams, 3 to 6 percent slopes, eroded	Clarion, eroded	60	Hills, Moraines	No	---
	Storden, eroded	25	Hills, Moraines	No	---
	Delft	5	Drainageways	Yes	2B3
	Terril	5	Moraines	No	---
	Webster	5	Drainageways	Yes	2B3
921C2:					
Clarion-Storden loams, 6 to 12 percent slopes, eroded	Clarion, eroded	50	Hills, Moraines	No	---
	Storden, eroded	35	Hills, Moraines	No	---
	Delft	5	Drainageways	Yes	2B3
	Terril	5	Moraines	No	---
	Webster	5	Drainageways	Yes	2B3

Hydric Soils

Brown County, Minnesota

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
923E:					
Copaston-Rock outcrop complex, 0 to 40 percent slopes	Copaston	60	Stream terraces	No	---
	Rock outcrop	25	Stream terraces		---
	Ves	10	Moraines	No	---
	Tilfer	5	Drainageways	Yes	2B3
929:					
Fieldon-Canisteo complex	Fieldon	50	Flats, Outwash plains	Yes	2B3
	Canisteo	35	Flats, Outwash plains	Yes	2B3
	Lemond	5	Flats	Yes	2B3
	Nicollet	5	Moraines	No	---
	Spicer	5	Rims	Yes	2B3
946:					
Dickman-Nicollet complex	Dickman	45	Hills, Moraines	No	---
	Nicollet	40	Hills, Moraines	No	---
954B2:					
Ves-Storden loams, 2 to 6 percent slopes, eroded	Ves, eroded	65	Hills, Moraines	No	---
	Storden, eroded	25	Hills, Moraines	No	---
	Webster	7	Drainageways	Yes	2B3
	Terril	3	Moraines	No	---
954C2:					
Ves-Storden loams, 6 to 12 percent slopes, eroded	Ves, eroded	45	Hills, Moraines	No	---
	Storden, eroded	40	Hills, Moraines	No	---
	Delft	10	Drainageways	Yes	2B3
	Terril	5	Moraines	No	---

Hydric Soils

Brown County, Minnesota

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
954D2:					
Storden-Ves loams, 12 to 18 percent slopes, eroded	Storden, eroded	60	Hills, Moraines	No	---
	Ves, eroded	25	Hills, Moraines	No	---
	Delft	10	Drainageways	Yes	2B3
	Terril	5	Moraines	No	---
960D2:					
Storden-Clarion loams, 12 to 18 percent slopes, eroded	Storden, eroded	60	Hills, Moraines	No	---
	Clarion, eroded	25	Hills, Moraines	No	---
	Delft	10	Drainageways	Yes	2B3
	Terril	5	Moraines	No	---
968:					
Hanska-Webster complex	Hanska	50	Flats, Moraines	Yes	2B3
	Webster	40	Flats, Moraines	Yes	2B3
	Dickman	5	Outwash plains	No	---
	Glencoe	5	Depressions	Yes	2B3, 3
999B:					
Ves-Storden-Estherville complex, 2 to 6 percent slopes	Ves	45	Hills, Moraines	No	---
	Estherville	20	Hills, Moraines	No	---
	Storden	20	Hills, Moraines	No	---
	Webster	10	Drainageways	Yes	2B3
	Terril	5	Moraines	No	---

Hydric Soils

Brown County, Minnesota

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
999C:					
Ves-Storden-Estherville complex, 6 to 12 percent slopes	Ves	35	Hills, Moraines	No	---
	Estherville	25	Hills, Moraines	No	---
	Storden	25	Hills, Moraines	No	---
	Delft	10	Drainageways	Yes	2B3
	Terril	5	Moraines	No	---
999D:					
Storden-Ves-Hawick complex, 12 to 18 percent slopes	Storden	35	Hills, Moraines	No	---
	Hawick	25	Hills, Moraines	No	---
	Ves	25	Hills, Moraines	No	---
	Delft	10	Drainageways	Yes	2B3
	Terril	5	Moraines	No	---
999F:					
Storden-Hawick complex, 18 to 50 percent slopes	Storden	55	Hills, Moraines	No	---
	Hawick	30	Hills, Moraines	No	---
	Sparta	10	Outwash plains	No	---
	Terril	5	Moraines	No	---
1016:					
Udorthents, loamy	Udorthents, loamy	100	Moraines		---
1027:					
Udorthents, wet substratum	Udorthents, wet substratum	100	Flats, Moraines, Outwash plains, Stream terraces		---
1029:					
Pits, gravel	Pits, gravel	100	Outwash plains		---
1052:					
Palms and Okoboji soils, ponded	Okoboji, ponded	50	Depressions, Moraines	Yes	2B3, 3
	Palms, ponded	50	Depressions, Moraines	Yes	1, 3

Hydric Soils

Brown County, Minnesota

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
1356:					
Water, miscellaneous	Water, miscellaneous	100	---		---
1829B:					
Ridgeport variant loam, 0 to 6 percent slopes	Ridgeport, variant	85	Hills, Stream terraces	No	---
	Estherville	5	Outwash plains	No	---
	Linder	5	Outwash plains	No	---
	Tilfer	5	Drainageways	Yes	2B3
1829C:					
Ridgeport variant loam, 6 to 15 percent slopes	Ridgeport, variant	90	Hills, Stream terraces	No	---
	Estherville	5	Stream terraces	No	---
	Tilfer	5	Drainageways	Yes	2B3
1833:					
Coland loam	Coland, occasionally flooded	90	Flood plains	Yes	2B3
	Hanlon	4	Flood plains	No	---
	Kalmarville	3	Flood plains	Yes	2B3
	Spillville	3	Flood plains	No	---
1887:					
Millington clay loam, sandy substratum	Millington, sandy substratum, occasionally flooded	85	Flood plains	Yes	2B3
	Spillville	15	Flood plains	No	---
1909:					
Lemond loam, depressional	Lemond, depressional	90	Depressions, Outwash plains	Yes	2B3, 3
	Blue Earth	10	Depressions	Yes	1, 3

Hydric Soils

Brown County, Minnesota

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
1911F:					
Storden-Ridgeport variant loams, 15 to 50 percent slopes	Storden	60	Hills, Moraines	No	---
	Ridgeport, variant	25	Hills, Terraces	No	---
	Hawick	5	Stream terraces	No	---
	Sparta	5	Stream terraces	No	---
	Terril	5	Moraines	No	---
1912:					
Tilfer variant clay loam	Tilfer, variant	85	Stream terraces	Yes	2B3
	Lemond	15	Flats	Yes	2B3
1917:					
Nishna silty clay, ponded	Nishna, frequently flooded, ponded	85	Flood plains	Yes	2B3, 3, 4
	Colo	15	Flood plains	Yes	2B3
1919F:					
Clarion-Terril loams, 25 to 50 percent slopes					
1928:					
Hanska loam, gravelly substratum	Hanska, gravelly substratum	90	Flats, Outwash plains	Yes	2B3
	Linder	10	Outwash plains	No	---
1929:					
Lemond loam, gravelly substratum	Lemond, gravelly substratum	90	Flats, Outwash plains	Yes	2B3
	Hanska	5	Drainageways	Yes	2B3
	Linder	5	Outwash plains	No	---
1930:					
Dickman sandy loam, moderately wet	Dickman, moderately wet	90	Hills, Outwash plains	No	---
	Hanska	10	Drainageways	Yes	2B3

Hydric Soils

Brown County, Minnesota

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
1931:					
Essexville sandy loam	Essexville	90	Flats, Moraines	Yes	2B3
	Canisteo	4	Rims	Yes	2B3
	Lemond	3	Flats	Yes	2B3
	Webster	3	Drainageways	Yes	2B3
L13A:					
Klossner muck, depressional, 0 to 1 percent slopes	Klossner, drained	80	Depressions, Moraines	Yes	1
	Mineral soil, drained	15	Depressions, Moraines	Yes	2B3
	Houghton, drained	5	Depressions, Moraines	Yes	1
L83A:					
Webster clay loam, 0 to 2 percent slopes	Webster	65	Flats, Moraines, Swales	Yes	2B3
	Glencoe, depressional	14	Depressions, Moraines	Yes	2B3, 3
	Canisteo	8	Depressions, Flats, Moraines, Rims	Yes	2B3
	Nicollet	8	Flats, Moraines, Rises	No	---
	Poorly drained soil	5	Flats, Moraines, Swales	Yes	2B3
L84A:					
Glencoe clay loam, depressional, 0 to 1 percent slopes	Glencoe, depressional	80	Depressions, Moraines	Yes	2B3, 3
	Very poorly drained muck	10	Depressions, Moraines	Yes	2B3
	Canisteo	5	Depressions, Flats, Moraines, Rims	Yes	2B3
	Harps	5	Depressions, Rims	Yes	2B3
L85A:					
Nicollet clay loam, 1 to 3 percent slopes	Nicollet	85	Flats, Moraines, Rises	No	---
	Clarion	10	Hills, Moraines	No	---
	Webster	5	Flats, Moraines, Swales	Yes	2B3

Hydric Soils

Brown County, Minnesota

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
L163A:					
Okoboji silty clay loam, depressional, 0 to 1 percent slopes	Okoboji, depressional	92	Lake plains, Moraines	Yes	2B3
	Canisteo	2	Depressions, Flats, Moraines, Rims	Yes	2B3
	Harpster	2	Lake plains	Yes	2B3
	Knoke, depressional	2	Lake plains	Yes	2B3
	Prinsburg	2	Depressions, Flats, Lake plains, Moraines, Rims	Yes	2B3
L201A:					
Normania loam, 0 to 3 percent slopes	Normania	85	Flats, Moraines, Rises	No	---
	Amiret	7	Hills, Moraines	No	---
	Seaforth	3	Flats, Moraines, Rises	No	---
	Webster	3	Flats, Moraines, Swales	Yes	2B3
	Canisteo	2	Depressions, Flats, Moraines, Rims	Yes	2B3
W:					
Water	Water	100	---		---

Hydric Soils

This table lists the map unit components that are rated as hydric soils in the survey area. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and others, 2002).

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for all of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils, under natural conditions, are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2003) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and others, 2002).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

Map units that are dominantly made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units dominantly made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform.

The criteria for hydric soils are represented by codes in the table (for example, 2B3). Definitions for the codes are as follows:

1. All Histels except for Folistels, and Histosols except for Folists.
2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, Pachic subgroups, or Cumulic subgroups that:
   A. are somewhat poorly drained and have a water table at the surface (0.0 feet) during the growing season, or
   B. are poorly drained or very poorly drained and have either:
      1) a water table at the surface (0.0 feet) during the growing season if textures are coarse sand, sand, or fine sand in all layers within a depth of 20 inches, or
      2) a water table at a depth of 0.5 foot or less during the growing season if permeability is equal to or greater than 6.0 in/hr in all layers within a depth of 20 inches, or
      3) a water table at a depth of 1.0 foot or less during the growing season if permeability is less than 6.0 in/hr in any layer within a depth of 20 inches.
3. Soils that are frequently ponded for long or very long duration during the growing season.
4. Soils that are frequently flooded for long or very long duration during the growing season.

References:

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.
Federal Register. September 18, 2002. Hydric soils of the United States.
Federal Register. July 13, 1994. Changes in hydric soils of the United States.
Hurt, G.W., P.M. Whited, and R.F. Pringle, editors. Version 5.0, 2002. Field indicators of hydric soils in the United States.
National Research Council. 1995. Wetlands: Characteristics and boundaries.
Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.
Soil Survey Staff. 2003. Keys to soil taxonomy. 9th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.
Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.
Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.
United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.